
Appendix 3 – Arborist Report prepared by The Arborist Network

Arboricultural Impact Assessment Report

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Executive Summary

The proposed development involves the removal of two existing unit blocks and the construction of a new five-storey block with two levels of basement parking along with associated landscape works.

The plans reflect the retention of a large Oak tree in the rear yard as well as a number of palms along the western boundary and a Robinia in the front yard. This report recommends the removal of the Robinia and replanting with a more suitable species as a part of the landscaping works.

In order to construct the building, two large Magnolia trees need to be removed. Consideration has been given to transplanting these two trees but the cost appears to be disproportionate to the landscape benefits.

A Tree Protection Plan (specifications) and Tree Protection Plan (drawing) have been prepared and are included in this report. Provided that these plans are followed the trees that are being retained will not be significantly impacted by the proposed works.

Brief

The author has been asked to;

- visit the site,
- identify the trees present and within 10 metres of the development,
- assess existing site conditions,
- assess the current health of the trees,
- perform a Preliminary Tree Assessment,
- assess the impact of the proposed development on the trees,
- produce a Tree Protection Plan and Tree Protection Plan (drawing),
- compile an Arboricultural Impact Assessment Report.

Information Provided

Plan Name	Drawn By	Date	Plan Number
Ground Level	Helm	21/6/216	PA.01
Level 1	Helm	21/6/216	PA.02
Level 2	Helm	21/6/216	PA.03
Level 3	Helm	21/6/216	PA.04
Level 4	Helm	21/6/216	PA.05
Basement Level 1	Helm	21/6/216	PA.06
Basement Level 2	Helm	21/6/216	PA.07
Detail Survey	Daw & Walton	23/6/2016	1/10-10/10

Geotechnical Report prepared by JK Geotechnics on 25th May 2016.

Method

A site inspection was carried out on the 16th February and the 20th April 2016 and the site related observations contained in this report arise from the inspection on those dates.

This report considers all trees on the neighbouring properties that are likely to be impacted by the proposed development regardless of the definition contained in the Tree Preservation Order.

All trees were inspected from the ground and involved inspection of the external features only. Inspection of trees on the neighbouring property was from client's property and or the public footpath. The inspection included the performance of a Visual Tree Assessment (VTA)^{1,2}. This inspection did not include any invasive, diagnostic or laboratory testing.

The identification of the trees was made on broad the features visible, from the ground, at the time of inspection. It was not based upon a full taxonomical identification or comparison against an herbarium specimen. Wherever possible, the genus and probable species is provided.

Only the plans referred to above, have been used in assessing the impact of the proposed DA on the trees. In particular, it is noted that no drainage, landscape or service plans referred to in the preparation of this report.

Where specifications are made in this report including those specifications contained in the Tree Protection Guidelines it is essential that these specifications can be implemented. Any additional drawings, details or redesign that impact on the ability to do so may negate the conclusions made in this report

¹ VTA – Visual Tree Assessment, as referenced below, is a systematic inspection of a tree for indicators of structural defects that may pose a risk due to failure. The first stage of this assessment is made from ground level and no aerial inspection is undertaken unless there are visual indicators to suggest that this is merited. Details of the visual indicators are contained in *The Body Language of Trees* by Mattheck & Breloer (1994). The use of a Visual Tree Assessment is widely used and standardised approach. Invasive and other diagnostic fault detection procedures will generally only be recommended when visual indicators of potential concern are observed.

² Mattheck, C & Breloer, H 1994 *Field guide for visual tree assessment (VTA)*, Arboriculture Journal 18:1-23

Observations

See Tree Schedule attached as Appendix 1. With the exception of an Agonis (Tree 6) and Oak (Tree 5) and two Magnolias (Trees 3 and 4) the plantings are relatively recent (less than 20 – 30 years).

The site is relatively flat. The site soils are a sandy loam over sand.

The proposal calls for the demolition of two existing blocks of units followed by the construction of a 5 storey unit block with two levels of basement parking and associated landscaping.

Discussion

Tree removal and retention

The proposal involves the retention of the Oak tree (Tree 5) along with a number of trees (mostly palms) along the western boundary. The retention of the oak is covered in more detail in the following section.

All the trees shown as being retained along the western boundary may not be able to be retained. While this looks good on paper there has been no consideration given to the construction method that may involve piers and a cap beam. These systems are relatively thick and this appears not to have been considered at this stage.

Consideration was given to the retention of the Agonis (Tree 6); however, the form of this tree and its condition make the retention impractical

The plans also reflect the retention of a Robinia in the front yard (Tree 2). Whilst it may be possible to retain this tree it is in fair health (most likely due to grazing by possums). Furthermore, this species is prone to suckering when roots are damaged and root damage is inevitable as a part of the proposed works. As a result, it may be more appropriate to consider removing this tree and replanting with a 400 litre tree as a part of the final landscape works.

The proposed development requires the removal of the two Magnolia trees (Trees 3 and 4). Consideration has been given to transplanting these two trees. Whilst it is technically possible to transplant the trees the cost of doing so would be disproportionate to the landscape benefit that the trees would provide. In addition, consideration has to be given to the need of large transplants, such as these to be maintained for a number of years after they have been moved as well as the small risk (less than 3%) of mortality associated with transplanting.

In addition, the basement excavation is shown as running through a number of these. The trees that are to be retained are palms. If these palms are going to be in the way of the basement excavation or construction they should be transplanted further to the west.

Impact on the root system of the Oak

The only tree of any significance that is being retained and that will be affected by the proposed development is the Oak (Tree 5).

Tree number 5		<i>Quercus robur</i>		DBH ³ = 100 cm	
ITPZ ⁴ = 12 m		MTPZ ⁵ = 5 m		ISRZ ⁶ = 3.2 m	
				RPA ⁷ = 452 m ²	
The proposed excavation is shown as coming no closer than 8.5 metres from the centre of the tree (including an allowance of 0.5 m for piers and a cap beam). The encroachment has an area of approximately 40 m² or less than 10% of the RPA. This is a Minor Encroachment, as defined in 3.3.2 of AS4970-2009.					
Given the sandy site soils and the deeper root profile, it seems reasonable to conclude that the impact on this tree will not be significant. In addition, the impact can be further reduced by managing Oak aphids, providing supplementary irrigation and where possible commencing root pruning during the dormant season.					

Design and construction Issues

The proposed excavations and construction adjacent to the Oak (Tree 5) has the potential to result in unnecessary damage to the roots, either by way of drying of the soil or as a result of over excavation. As a result, contiguous piling, or similar system, must be used for all excavation within 12 metres of the trunk of Tree 5. In order to minimise damage to the branches, a low profile drilling rig will need to be used.

The ground floor level is shown as +2.500 metres. This means that portions of the ground floor slab near the tree will either be cantilevered or will need the use of some form of pier and beam structure. The installation of the overhanging portions must not require the use of continuous strip footings.

As a result of Work Health and Safety requirements, the cleaning of gutters on a multistorey building often requires a fall arrest system. Because there are a number of larger trees on and adjacent to the site, consideration should be given to installing a gutter system that will not be significantly impacted by leaves. This could include one or more of the following

- installing a quality leaf screening system that is installed over the lower portion of the roof and the top of the gutters, and
- installing 'Tornado Rain Heads' to increase the flow and reduce the likelihood of any blockages, and

³ DBH The Diameter at Breast Height (1.4 metres above ground level) in centimetres

⁴ ITPZ The Indicative Tree Protection Zone radius in metres as suggested in AS4970 – 2009 without requiring input from an arborist or any ongoing care.

⁵ MTPZ The Minimum Tree Protection Zone radius in metres determined following the process for reducing the TPZ outlined in AS 4970 – 2009. Trees retained using the he TPZM usually require moderate to intensive arboricultural input along with ongoing inspections and maintenance for a number of years.

⁶ ISRZ The Indicative Structural Root Zone calculated using the formula in AS4970 and rounded to one decimal place.

⁷ RPA The Root Protection area or the total area that would be enclosed if the TPZ is enclosed